

IS THELYPTERIS PARASITICA IN CULTIVATION IN THE UNITED STATES?—Many of the ferns formerly placed in the genus *Dryopteris* are now properly called *Thelypteris*, among them *Dryopteris parasitica* (L.) Kuntze, which now becomes *Thelypteris parasitica* (L.) K. Iwatsuki.¹ There are plants in cultivation in the United States under this name and also plants being offered by dealers, but all that I have examined have proved to be *Thelypteris dentata* (Forsk.) E. St. John. These two species belong to one of the most difficult groups of ferns, and the difficulties are not to be solved readily, for they are inherent in the group by reason of its almost worldwide range (the tropics of Africa, Asia, and America), its great variability, and also probably because of extensive hybridization in the wild.

Ching² attempted to distinguish *T. parasitica* and *T. dentata* by characters of the venation: Both have the lowest pairs of veins united into an excurrent veinlet running out toward the sinus between the lobes of the pinnae, but in *T. parasitica* the second anterior vein is supposed to run to the margin above the sinus or occasionally exactly to the sinus, but not to join with the excurrent veinlet. But in *T. dentata* the second anterior veinlet is said to join with the excurrent veinlet. However, an examination of specimens from China studied and annotated by Ching does not support this distinction at all. Both kinds of venation seem to be found in both species.

Wagner³ at first distinguished *T. dentata* by having the fronds only sparsely hairy, the indusium with very short hairs, and the segments closest to the rhachis usually not enlarged, but these characters do not always hold when these species are considered in their worldwide ranges. Later, he⁴ used addi-

¹J. Jap. Bot. **38**: 315. 1963.

²"A Revision of the Chinese and Sikkim-Himalayan *Dryopteris*," Bull. Fan. Inst. Biol., Bot. **4**: 170-178, 204, 208. 1938.

³"Pteridophytes of Guam," Occas. Pap. Bernice P. Bishop Mus. **19**: 48. 1948.

⁴"Ferns Naturalized in Hawaii," Occas. Pap. Bernice P. Bishop Mus. **20**: 108, 109. 1950.

tional characters, and his treatment remains the latest study. His key, reproduced below, may be tentatively accepted as a working basis for distinguishing these species.

Fronds dimorphic, the fertile ones narrower, with more remote pinnae, sharply distinct from and standing high above the more spreading sterile fronds; lamina darker green, usually chartaceous in texture, more or less short-hairy, without glands below; basal pinnae 1—5 pairs, reduced in size often to mere auricles and becoming distant; all pinnae relatively broad, and cut usually less than half-way down to the midrib; anterior basal segment or lobes of the lower pinnae not extended or but little extended and not overlapping the adjacent pinnae; excurrent veinlet below the sinus formed by the basal pair of veinlets plus one or two more distal veinlets; indusium sparsely short-hairy.

T. dentata (Forsk.) E. St. John

Fronds uniform, the fertile fronds of nearly the same shape as the sterile ones, but many fronds incompletely fertile, the sori in these paired at the bases of the segments; lamina pale green, membranaceous, densely long-hairy, often with dark-orange glands on the lower surface; basal pinnae of the same size as those above or only slightly smaller; pinnae all narrower, and cut usually half-way down to the midrib; anterior basal segments of the lower pinnae extended, often overlapping the rhachis or the lowest segments of the adjacent pinnae; excurrent veinlet formed only by the basal pair of veinlets, the next veinlets ending at the margin above the sinus; indusium densely long-hairy.

T. parasitica (L.) K. Iwatsuki

It would be interesting to me to know if plants corresponding to the characterization of *T. parasitica* given above are really in cultivation in the United States. They would be expected outdoors only in southern California or perhaps in southern Florida.—C. V. MORTON, *Smithsonian Institution, Washington, D. C. 20560.*